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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,686	12/28/2001	Sun Min Kim	0630-1292P	3634

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EXAMINER

NGUYEN, HIEP

ART UNIT PAPER NUMBER

2816

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,686

Applicant(s)

KIM ET AL. *MC*

Examiner

Hiep Nguyen

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction and /or clarification is required.

Regarding claim 1, the recitation “in accordance with an amount of power consumption of the host and thereby outputting at least one level detection signal” is indefinite because it is not clear how the power consumption of the host is detected in order to selectively drive the unit charge pump. It is also not clear what the “power consumption” is meant by in this claim. As understood by the examiner, the “power consumption” is the output voltage (VPP).

Claims 4, 5, 9 and 15 are indefinite because it is not clear how to know when the power consumption of the host is high or low. Figure 4 of the present application shows that the level detector comprises a voltage divider. If (VPP) is high enough then all the voltages outputted from the voltage divider are higher than (VREF) and all the charge pumps 1-nth) are driven. When (VPP) is low enough so that only the voltage at the node between (R0) and (R1) is higher than (VREF), then the FIRST amplifier (100-1) is driven, not the second amplifier (100-2) that drives the second charge pump as claimed in claim 5.

Regarding claim 12, the recitation “wherein the first voltage level is lower than the reference level is indefinite because it is misdescriptive. Figure 4 of the present application shows that the first amplifier (100-1) receives the lowest voltage and generates signal (DET1) to drive the first charge pump. If this voltage is LOWER than the reference voltage, the first amplifier (110-1) will not output any signal to drive the first charge pump.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 9, and 13-15, insofar as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Banba et al. (US Pat. 6,128,242).

Regarding claims 1 and 2, figure 8 of Banba shows a charge pump device for supplying a step-up voltage to a host, the device comprising: a charge pump part constructed with first to nth unit charge pumps (22-25); and a multi-level detector (26- 28) for detecting a level of a step-up voltage to selectively drive the unit charge pumps “in accordance with an amount of power consumption”. The oscillator is element (21) and the logic operation part is (30, 31, 32).

Regarding claim 3, figure 8 shows that the first unit charge pump (22) is always driven by the level detection signal output from the multi-level detector.

Regarding claims 4 and 5, figure 5 of Banba shows that when the output of the charge pump device (Vccint) is high enough, all the charge pumps (22-25) are driven. When the output of the charge pump device is low enough, only the first charge pump (22) is driven.

Regarding claim 9, figure 8 of Banba shows a charge pump device associated with a host, comprising: a charge pump part including first to nth unit charge pumps (22-25); a multi-level detector (26-28) detecting a level of a step-up voltage so as to selectively drive the unit charge pumps “in accordance with an amount of power consumption of the host”; a signal generator (21) producing a pulse signal in accordance with a level detection signal of the multi-level detector; and a logic operation part (30-32) operating on the pulse signal of the oscillator and a level detection signal produced from the multi-level detector, and thereby outputting an operated signal to the first to nth unit charge pumps.

Regarding claim 13, figure 8 of Banba shows that the first unit charge pump (22) is always driven by the level detection signal output from the multi-level detector because the input of element (27) is connected to the lowest voltage of the voltage divider (26).

Regarding claims 14 and 15, figure 8 of Banba shows that when the output of the charge pump device (Vccint) is high enough, all the charge pumps (22-25) are driven. When the output of the charge pump device is low enough, only the first charge pump (22) is driven.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banba et al. (US Pat. 6,128,242).

Regarding claims 16 and 17, figure 8 of Banba includes all the limitations of the present application except for the limitation that the logic operation part performs a NAND gate operation. However, it is old and well known in the art that NAND gate and AND gate are exchangeable. Therefore, it would have been obvious for those skilled in the art to replace the AND gates of the logic operation part of Banba with the NAND gates to match with the required signal polarity of the inputs of the charge pumps.

Conclusion

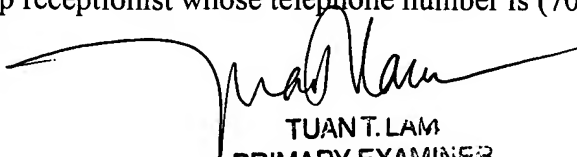
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hiep Nguyen whose telephone number is (703) 305-0127. The examiner can normally be reached on Monday to Friday from 7:30 A.M. to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 308-4876. The fax phone number for this Group is (703) 308-6251.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Hiep Nguyen

09-26-02



TUAN T. LAM
PRIMARY EXAMINER